

ABSTRACT

A single phase consisting of a ThMn_{12} phase can be obtained by having the composition thereof represented by a general formula $\text{R}(\text{Fe}_{100-y-w}\text{Co}_w\text{Ti}_y)_x\text{Si}_z\text{A}_v$ (in the general formula, R is at least one element selected from rare earth elements (here the rare earth elements signify a concept inclusive of Y), Nd accounts for 50 mol% or more of R, and A is N and/or C) in which the molar ratios in the general formula are such that $x = 10$ to 12.5 , $y = (8.3 - 1.7 \times z)$ to 12.3 , $z = 0.1$ to 2.3 , $v = 0.1$ to 3 and $w = 0$ to 30 , and the relation $(\text{Fe} + \text{Co} + \text{Ti} + \text{Si})/\text{R} > 12$ is satisfied.